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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,968	05/10/2001	Junichi Sasaki	OSP-10578	4115
21254	7590	09/28/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			HYEON, HAE M	
			ART UNIT	PAPER NUMBER
			2839	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/851,968	Applicant(s) SASAKI ET AL.	
	Examiner Hae M Hyeon	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7 and 13-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,13,14 and 17 is/are rejected.
- 7) ☒ Claim(s) 15,16 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: It is not clear what is the claimed invention in claim 7 because claim 7 does not clearly define what is the preamble and what is the body of the invention.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 7, 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp (6,227,722 B1) in view of Bruce et al (6,312,581 B1) and Shahid (6,352,372 B1).

Kropp discloses an optical module comprising an optical waveguide having multiple cores 4 buried in a clad 30, a rectangular-shaped optical waveguide substrate 60 including high precision steps 64 formed along a longitudinal direction of the substrate 60 on both sides of an upper surface 61 of the substrate 60, and an optical fiber connecting end member 70 including guide pin insertion holes 23 and 24 and a hole (open space pointed by the reference number 25 in Figure 1) for accommodating and fixing an end surface of the substrate 60. The optical waveguide is mounted on the substrate 60. On an inside of the through hole, steps 68 are formed so as to fit the high precision steps 64 when the substrate 60 is inserted in the through hole.

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However Kropp does not disclose the substrate 60 to be silicon optical waveguide substrate and the end member 70 does not have the hole with a bottom surface.

Bruce teaches that the silicon substrate is already known type of optical waveguide substrate in optical fiber communication system.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the substrate taught by Kropp such that it would be formed from a silicon substrate as taught by Bruce because the silicon substrate is already known and used substrate in optical fiber communication system. Thus, the use of the silicon substrate only deals with the use of a preferred material. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding to the optical fiber connecting end member having a hole with a top surface, a bottom surface, a first side surface, and a second side surface; and the high precision step formed along each side surface of the waveguide substrate or the housing member, Shahid discloses an optical element housing member 90 comprising a hole 100 therethrough for accommodating an end of a substrate 22 and optically connecting the substrate to an optical element. The hole 100 of the housing member 90 includes a top surface 96, a bottom surface 98, a first side surface 92, a second side surface 94, and a step 102 for position the substrate 22. The step 102 is formed on the top surface 96 of the hole 100 along each side surface of the hole 100. Furthermore, forming the high precision step along each side surface of the waveguide substrate or the housing member only deals with rearrangement of parts. Whether the steps are formed on a top surface or along the side edges of the substrate or the housing member, the steps will properly align the substrate with the housing. It has been held that rearranging parts of an invention involves only

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routine skill in the art. *In re Japikse*, 86 USPQ 70. Lastly, since the claims do not recite the exact value to represent the high precision, the alignment steps of Kropp and Shahid can be said to have high precision steps because the alignment steps of Kropp and Shahid properly align the optical waveguide substrate in the end member and with a mating optical module.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the steps on the substrate taught by Kropp such it would have the end member with top, bottom, and two side surfaces as taught by Shahid because the end member having a hole with a bottom surface would securely hold the substrate within the hole of the end member. Furthermore, whether the steps are on a top surface or along the side edges, the substrate will be aligned properly within the end member.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp, Bruce et al, and Shahid as applied to claims 1, 2, 7, 13, 14, and 17 above, and further in view of Kawaguchi et al (6,361,222 B1).

Claims 3 and 4 recites that the optical waveguide includes an inclined groove relative to the propagation direction of the light and a light reflecting device provided on the inclined groove.

While Kropp does not disclose an inclined groove and a light reflecting device, Kawaguchi discloses an optical module having an optical waveguide 12 with an inclined groove 23 and a light reflecting device 15 provided on the inclined groove 23. The light reflecting device 15 reflects a signal light beam having a specific wavelength and guides it to a reception photodiode 14b.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the optical module taught by Kropp such that it would have an

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inclined groove and a light reflecting device on an optical waveguide as taught by Kawaguchi because the inclined groove and the light reflecting device can reflect a specific wavelength in a signal light beam to a specific device.

Allowable Subject Matter

5. Claims 15, 16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: None of the references shows the end member having a cavity that opens from the bottom surface of the hole to permit the substrate to be pressed toward the top surface of the hole so as to align the high precision steps on the substrate with the steps of the hole.

Response to Arguments

7. Applicant's arguments with respect to claims 1-4, 7 and 13-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hae M Hyeon whose telephone number is 571-272-2093. The examiner can normally be reached on Mon.-Fri. (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tulsidas C Patel can be reached on (571) 272-2098. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hae M Hyeon
Primary Examiner
Art Unit 2839

hnh hnh

Hae Moon Hyeon